proved of purifying contaminated oil by means of a centrifuge.
The Institute for Thermal Power of the Ac.Sc. Ukrainian SSR has evolved equipment on power-technological utilisation of Ukrainian brown coals, the installation of which is in the process of being completed. The same institute, jointly with the Power Institute of the Ac.Sc. Belorussian SSR, evolved projects of an installation for power-technological utilisation of milling peat. The Institute of Chemistry of the Ac.Sc. Belorussian SSR, jointly with the Power Institute of the Ac.Sc. Estonian SSR, developed and tested on pilot-plant scale, using equipment built by the "Il'marine" Works, a reactor of a new design, with a wedge-shaped pusher, for thermal processing of shale with

SOV/24-58-4-35/39

Problem of Combined Utilisation of Fuel in the National Economy for Generating Power and for Technological Purposes
Conference of Power Research Establishments of the Ac.Sc.USSR and of the Individual Soviet Republics

a solid heat carrier inside a thin layer.
This is virtually a complete translation.

Card 12/12

SOV/24-58-4-36/39

AUTHOR: Solomonov, M.

TITLE: Application of Technological Lubricants and Special Coatings During Shaping of Metals by Applying Pressure (Primeneniye tekhnologicheskikh smazok i spetsial'nykh pokrytiy pri obrabotke metallov davleniyem) Conference at the Institute for Mechanical Engineering of the Ac.Sc. USSR (Soveshchaniye v Institute mashinovedeniya Akademii nauk SSSR)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, p 153 (USSR)

ABSTRACT: The conference was held in December, 1957. The following papers were read: "General Relations and the Mechanism of Operation of Lubricants During Shaping of Metals by Applying Pressure" by V.I. Likhtman, S.Ya. Veyler (Institut fizicheskoy khimii AN SSSR - Institute of Physical Chemistry of the Ac.Sc.USSR); "Application of Principles of the Hydrodynamic Theory to the Process of Cold Stamping" by Ye.I. Isachenkov (NIAT); "New Stamping Lubricants for Deep and Particularly for Very Deep Drawing of Components made of Sheet Steel" by M.A. Sil'tsova (Gor'kovskiy avtozavod - Gor'kiy Automobile Works); "Lubricants for Stamping Sheet of Steel and of Various Alloys" by Yu.P. Davydov (VIAM);

Card1/4

SOV/24-58-4-36/39

Application of Technolcgical Lubricants and Special Coatings During Shaping of Metals by Applying Pressure
Conference at the Institute for Mechanical Engineering of the Ac.Sc.USSR

"New Lubricants for Wire Drawing" by A.G. Smirnova (TsNIIChERMET); "Investigation of Technological Lubricants Applied for Hot Stamping of Metal Components" by S.A. Dovnar (Minskiy politekhnicheskiy institut im. I.V. Stalina - Minsk Polytechnical Institute imeni I.V. Stalin); "Investigation and Testing of Certain Technological Lubricants and Methods of Applying these on the Dies of Presses During Hot Stamping of Aluminium Alloys" by E.R. Shor (TsNIITMASh); "Lubricants Used in Shaping of Metal by Pressure" by Ye.B. Zhuravskiy (Aviatsionnyy zavod - Aviation Works). The data given in the individual papers show the increasing use of liquid, paste and solid technological lubricants and special coatings in highly efficient processes of shaping metals by applying pressure in the production of complicated components from various heavy and light non-ferrous alloys. The undertakings of the chemical and the oil industries have so far not organised the

Card2/4

Application of Technological Lubricants and Special Coatings During Shaping of Metals by Applying Pressure
Conference at the Institute for Mechanical Engineering of the Ac.Sc.USSR

production of the appropriate lubricants and the instrument industry does not produce instruments for determining the main parameters of these lubricants. So far, investigations by individual institutes of the Ac.Sc.USSR on technological lubricants have not been carried out on a sufficiently large scale and have not been adequately co-ordinated. The same applies to other institutes.
S. Ya. Veyler (Institut fizicheskoy khimii AN SSSR - Institute of Physical Chemistry of the Ac.Sc.SSSR) reported on work in the field of lubricants for cold stamping. Since the result of this work is little known, it was proposed to devote to it a specially convened extended seminar at the Institute of Mechanical Engineering of the Ac.Sc.USSR.
Co-ordination was urged of the research work in the use of lubricants for shaping of metals by pressure and this

Application of Technological Lubricants and Special Coatings During Shaping of Metals by Applying Pressure
Conference at the Institute for Mechanical Engineering of the Ac.Sc.USSR

task should be undertaken by the Laboratoriya obrabotki metallov davleniyem Instituta mashinovedeniya AN SSSR (Laboratory for Shaping of Metals by Pressure of the Institute of Mechanical Engineering of the Ac.Sc.USSR). The importance was pointed out of putting onto the market instruments for determining the main parameters of lubricants and also of automatic equipment for coating dies with technological lubricants. It is necessary to work out standard specifications for technological lubricants and also recipes and methods of analysis of such lubricants and to increase the manufacture by the industry of standard technological lubricants. At regular intervals, symposia should be published on technological lubricants and special coatings used in the shaping of metals by applying pressure.

SOV/24-58-4-38/39

AUTHOR: Solomonov, M.

TITLE: Combating Sudden Ejections of Coal and Gas From Coal Mines (Bor'ba s vnezapnymi vybrosami uglya i gaza v ugol'nykh shakhtakh)
(Conference at the Institute of Mining of the Ac.Sc. USSR) (Soveshchaniye v Institute gornogo dela Akademii nauk SSSR)

PERIODICAL: Izvestiya Akademii Nauk, SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 155 - 156 (USSR)

ABSTRACT: On February 17 - 21, a conference was held at the Institut gornogo dela Akademii nauk SSSR (Mining Institute of the Ac.Sc.USSR) on the results and prospects of research work on combating sudden ejections of coal and gas and coal explosions in mines. Members of the Central Commission for combating sudden ejections of coal and gas, representatives of scientific research and project institutes and of higher teaching establishments participated in the conference. After a brief opening speech by Academician A.A. Skochinskiy, the following papers were read at the conference: "Investigation of the Conditions in the Field of Application of Local Methods of Preventing

Card1/4

SOV/24-58-4-38/39

Combating Sudden Ejections of Coal and Gas From Coal Mines. Conference at the Institute of Mining of the Ac.Sc.USSR

Sudden Ejections of Coal and Gas in preparatory workings and in drawing (V.V. Khodot); "Development of a Combination of Measures for Safe Mining of Coal in Stopes in Unprotected Zones of Seams Which are Dangerous From the Point of View of Sudden Ejections of Coal and Gas" (R.M. Krichevskiy); "Finding a Safe and Productive System of Working Individual Steeply Sloping Seams Which Have an Inclination to Develop Sudden Ejections of Coal and Gas" (B.S. Lokshin); "Finding an Effective System of Working Thin Seams for the Purpose of Utilising Them as Protective Seams" (B.S. Lokshin); "System of Working of the "Pugachevka" Mine of the im. Artem Trust of Dzerzhinskugol' (N.I. Zhivlov); "System of Working Individual Seams of the Central Donbass region Where There is a Danger of Sudden Ejections of Coal and Gas (D.F. Borisov); "Safe and Effective Methods of Working Coal Seams of the Yegorshinskiy deposits Which are Dangerous From the Point of View of Sudden Ejections of Coal and Gas" (D.F. Borisov); "Investigation of the Tendency to Ejections of Coal of the Makhnevskiy anthracite

Card2/4

Combating Sudden Ejections of Coal and Gas From Coal Mines.
Conference at the Insitute of Mining of the Ac.Sc. USSR

deposits and Justification of Rational Methods of Mining This Coal (I.N. Sidorov); "Method of Detection of Sections Which Are Dangerous as Regards Sudden Ejections in Seams of the Yegorshinskiy mining region" (O.I. Chernov); "Development of Geophysical Methods and Apparatus for Establishing and Studying the Forerunners of Sudden Ejections of Coal and Gas"(M.S. Antsyferov); "Results of Scientific Investigations on the Problem of Combating Shocks in Coal Mines During 1957" (S.G. Avershin); "On the State of Designing and Testing Drilling Machines and Equipment for Passing Through Galleries in Seams Which Are Dangerous From the Point of View of Ejections of Coal and Gas" (K.B. Kogan).
On the basis of the presented papers and discussions, the participants in the conference concluded that in 1957 progress was achieved in the theory of sudden ejections of coal and gas.

SOV/24-58-4-38/39

Combating Sudden Ejections of Coal and Gas from Coal Mines.
Conference at the Institute of Mining of the Ac.Sc.USSR

Some of the interesting items discussed at the conference are briefly summarised.

Card 4/4

SOV/24-58-4-39/39

AUTHOR: Solomonov, M.

TITLE: General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957 (Obshcheye sobraniye Otdeleniya Tekhnicheskikh nauk AN SSSR. Itogi nauchnoy i nauchno-organizatsionnoy deyatel'nosti otdeleniya za 1957 god)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 157 - 160 (USSR)

ABSTRACT: This meeting was held on March 19, 1958 under the chairmanship of Academician L.D. Shevyakov. During this meeting, the secretary of the Technical Sciences Section, Academician A.A. Blagonravov, presented a report on the scientific and organisational activities of the establishments of the Section during 1957.
The Institut avtomatiki i telemekhaniki (Institute of Automation and Telemechanics) solved the general problem of determining an optimum system for the case of the normal distribution of the non-regular part of the useful signal and the noise. The problem was solved of determining

Cardl/8

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957.

periodic regimes in non-linear systems with a broken-line characteristic. The same institute evolved a scheme of a pneumatic extreme-value regulator with a memory device intended for automation of new chemico-technological processes. A self-adjusting system of controlling electric grinding machines was evolved. In the Institut elektromekhaniki (Institute of Electro-mechanics), a method was evolved of improving the accuracy of the method of harmonic balance in investi-gations of non-linear automatic-control systems. In the same institute, theoretical foundations were evolved and a circuit was applied of a simple digital system for programming machining of components between reference points of a profile.
The Institut mashinovedeniya (Institute of Mechanical Engineering) produced a model of a milling machine with programme control and an electronic model was produced for investigating the dynamics of stepped systems of

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

programme control. Developments in other laboratories were also mentioned by Blagonravov. In the Energeticheskiy institut (Institute of Power), the conditions were established which would ensure a most economic utilisation of the electricity supply of the Urals from power stations located near the fuel bases of Eastern Siberia and Northern Kazakhstan. These power stations are to be linked with the long-distance power transmission lines of Siberia and the European part of the Soviet Union. It was found that under these conditions, it would be economical to transmit power by DC. Investigations were completed relating to the regimes of super-long-distance power transmission lines of such parameters as 2 000 to 2 500 km with a loading of up to 1 500 MW/circuit and methods of increasing their throughput capacity; the economy and the reliability of such lines were investigated. In the Institute of Mining, the basic material was collected for the design and construction of the iron-ore Yakovlevskiy mine of the Kursk magnetic anomaly, which is

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

to be the largest mine in the Soviet Union. The same institute established the regime data for a process of coking of Donets gas coal so as to obtain high-quality metallurgical coke. A method was derived of producing coal concentrates enriched with germanium, gallium and scandium. Furthermore, a new method was evolved of obtaining zirconium and titanium concentrates by using oxygen in the process of flotation.

IGI produced a technological gas which can be used for the synthesis of ammonia. IMEKh solved the problem of ejection by gas of liquids from a porous medium and thereby proved that it is possible to utilise underground cavities for creating stable gas storage space.

In the Institut metallurgii (Institute of Metallurgy), a high-strength titanium alloy was developed capable of operating at temperatures up to 600 °C. This institute also evolved a technology of producing components made of germanium of a small cross-section with a single-crystal structure. During 1957, the individual institutes

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

of the Technical Sciences Section of the Ac.Sc.USSR put into use twelve major developments. The Institute of Automation and Telemechanics introduced into industry new instruments and equipment, including contactless instruments and mechanisms which are very reliable, simple to produce and to operate. The Mining Institute developed rational methods of preparing shallow seams which are being used in thirty-three mines of the Donbass region. A combined method of beneficiation of oxided lead ores has passed industrial tests; this method enables extracting from the ores lead oxide minerals of a complex composition, which cannot be achieved by other methods. The Institute of Mining also introduced a new reagent, "Kubovyye/ ostatki" the use of which resulted in an increase in the yield of concentrates (at the Central Beneficiation Works in Karaganda) by 25% and in a 3-4-fold reduction in the reagent consumption.

Card 5/8

SOV/24-58-4-39/39

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

The Institute of Metallurgy carried out a great deal of work on introducing vacuum processes in metallurgy. Vacuum treatment of alloy steel in two shops of the "Dneprospetsstal'" Works brought about a doubling of the production of better grades of transformer steel and a halving of the rejects due to cracks in structural and stainless steels. The im. Dzerzhinskiy Works have mastered the process of vacuum treatment of bessemer steel, as a result of which the quality of bessemer, rimming and rail steels increased very appreciably. The same institute developed a technology of desulphurising pig iron outside the blast furnace, which enables increasing by 10-15% the productivity of blast furnaces with a consequent reduction in the consumption of raw materials and the production costs of pig iron. The Institute of Metallurgy, jointly with VAMI, has introduced electric smelting of briquetted concentrates from Irshinskoye deposits, producing a titanium slag with over 85% titanium oxide content and a relatively low consumption

Card6/8

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

of electricity. The surface-active substances of the type RAS (refined alkylaryl sulphonates) developed by the Institut nefti (Petroleum Institute) are to be manufactured in a works designed by Lengiprogaz. These substances will substitute natural fats in the soap industry and will be used as flotation reagents for beneficiation of ores of non-ferrous metals and of hard coal. A.A. Blagonravov also mentioned some deficiencies in the work of the individual institutes. In particular, he pointed out that, in a number of cases, the progress lags far behind the requirements. A number of measures are being taken to increase printing capacity of the Ac.Sc.USSR publishing house, which is at present inadequate for satisfying requirements. In the last part of his address, he dealt with problems of training scientific personnel and mentioned the increasing links between the

General Meeting of the Technical Sciences Section of the Ac.Sc. USSR. Results of the Scientific and the Scientific-organisational Activities of This Section During 1957

SOV/24-58-4-39/39

establishments of the Technical Sciences Section of the Ac.Sc. USSR and foreign establishments.
Corresponding Member of the Ac.Sc.USSR V.A. Kirillin, Academician A.I. Berg, Corresponding Members of the Ac.Sc. USSR B.K. Aleksandrov, A.V. Gorinov and N.A. Derevyanko participated in the discussions following the report of A.A. Blagonravov.
During the general meeting, Doctor of Technical Sciences N.A. Chinakal presented a paper on the "shield" system of working thick seams.

Card 8/8

USCOMM-DC-60,701

SOV/24-58-5-30/31

AUTHOR: Solomonov, M.

TITLE: Scientific-Method Conference on the Problem of Breaking-up Rocks by Explosions (Pervoye nauchno-metodicheskoye soveshchaniye po probleme drobleniya gornykh porod vzryvom)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, pp 143-144 (USSR)

ABSTRACT: On February 24-26, 1958 a conference was held on breaking-up rocks by explosions at the Institute of Mining, Ac.Sc., USSR (Institut Gornogo Dela AN SSSR). 100 people from 32 towns participated and the participants included representatives of Works, Research Institutes of the Ac.Sc. from various parts of the Soviet Union, departmental research institutes and of higher teaching establishments. On general theoretical problems the following papers were presented:
"On the problem of breaking-up rocks by explosions, present state and tasks" by L. I. Baron, Institute of Mining, Ac.Sc., USSR;
"On the dependence of the breaking-up on the total energy of the explosion" by A. F. Belyayev, Institute of

Card 1/5

SOV/24-58-5-30/31

Scientific-Method Conference on the Problem of Breaking-up Rocks by Explosions

Chemical Physics, Ac.Sc. USSR (Institut khimicheskoy fiziki AN SSSR);
"On experimental methods of studying the breaking-up of solid bodies" by L. K. Belokurov, Institute of Chemical Physics, Ac.Sc., USSR;
"On controlling the energy of elastic waves in rocks possessing a high acoustic rigidity and ensuring yield of fragments of a pre-determined size" by A.N.Khinukayev, Leningrad Mining Institute (Leningradskiy gornyy institut);
"On the technique of studying the character of breaking-up of firm rocks by means of charges of increased length" by V. I. Filippov, Institute of Mining, Ac.Sc. Kazakhstan SSR;
"On investigating the fields of the potential and the process of breaking-up of rocks by explosions in the case of instantaneous and briefly delayed charges in the terraces of open-cast mining" by F. A. Beliyenko, Dnepropetrovsk Mining Institute.
In the section relating to evaluation of the crushing properties of explosives and the breaking-up of rocks the

Card 2/5

Scientific-Method Conference on the Problem of Breaking-up Rocks by Explosions

following papers were presented:
"A new test for the examination of explosives in crushing operations" by L. I. Baron, B. D. Rossi, Institute of Mining, Ac.Sc. USSR;
"An investigation of the brisancy according to Hess as a characteristic of the properties of explosives in breaking-up rocks" by S. P. Levichik, Institute of Mining, Ac.Sc., USSR;
"On the influence of the explosive characteristics of explosives on the quality of breaking down of highly fissured and flooded rocks" by V. I. Mosinets, Institute of Non-Ferrous Metals and Gold;
"On the laboratory technique of determining the breaking-up of rocks" by L. I. Baron, R. V. Orlov, V.M.Kubatov, Institute of Mining, Ac.Sc. USSR.
In the section relating to determining the dimensions of fragments the following papers were presented:
"On the quantitative indices of the quality of breaking-up of rocks and the technique of their determination during work with explosives in railroad

Scientific-Method Conference on the Problem of Breaking-up Rocks by Explosions

construction" by Ye. Yu. Brodov, TsNIIS;
"Industrial production methods of estimating the fragmentation of rock produced by explosive breaking-up in quarries" by G. P. Demidyuk, and G. S. Cherepanov, Institute of Mining, Ac.Sc. USSR;
"Photogrammetric method of evaluating fragmentation of a rock mass" by O. S. Mechikov, Moscow Mining Institute.
In the section relating to the influence of the parameters of explosive fragmentation on the breaking-up of rocks and data of industrial investigations the following papers were presented:
"On the degree of fragmentation of ore and determination of its optimum value" by V. I. Terent'yev, Mining-Geological Station, Ac.Sc., USSR;
"On the first results of applying inclined bore holes of a reduced dimension for explosive work under difficult rock conditions in the Pervoural quarry" by N.U.Turuta, Sverdlovsk Mining Institute;
"On determining the rational degree of fragmentation of rocks by means of explosives" by B. N. Kutuzov, Moscow Mining Institute.

Scientific-Method Conference on the Problem of Breaking-up Rocks by Explosions SOV/24-58-5-30/31

Twenty people participated in the discussion. At the end of the conference it was decided that further work on the problems discussed requires efficient coordination and that the present state of the art in this field lags behind the requirements of the Soviet Mining Industry. The necessity was emphasized of studying the rate of fragmentation of rocks by dynamic methods; in accordance with the proposal by the Mining Institute, Ac.Sc. USSR a simplified method of dynamic tests are to be carried out on many types of rocks. The Hess test is inadequate for evaluating the effectiveness of various explosives for breaking-up rocks.

Card 5/5

SOV/24-58-5-31/31

AUTHOR: Solomonov, M.

TITLE: Experience Gained in Vacuum Treatment of Bessemer Steel (Opyt vakuumnoy obrabotki Bessemerovskoy stali), Scientific Council of the Institute of Metallurgy imeni A. A. Baykov (V uchenom sovete Instituta metallurgii im A. A. Baykova)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 5, p 144 (USSR)

ABSTRACT: At the meeting of the Scientific Council on March 20, 1958 a paper was read by L. M. Novik on the results of investigations of the Institute of Metallurgy and the imeni Dzerzhinskiy Works (under the leadership of Corresponding Member of the Ac.Sc. USSR A.M.Samarin), on the properties of Bessemer steel which was vacuum treated in the ladle. The first industrial experiments were carried out by the Institute in 1952 and 1953 at the Yenakiyevo Works and the experiments on introducing the process were successfully carried out in 1957 in the imeni Dzerzhinskiy Works where vacuum plant was constructed for a vacuum ladle of 22 tons capacity. Detailed analysis of the results of the operation of this

Card 1/3

Experience Gained in Vacuum Treatment of Bessemer Steel

equipment led to the following conclusions relating to the entire process of vacuum treatment of liquid metal: at a residual pressure of 5 to 10 mm Hg col. vacuum treatment for 14 to 15 mins ensures very thorough deoxidation of the metal solely with carbon which cannot be achieved even by means of diffusion deoxidation and thereby the oxygen content in the metal may reach 0.005 to 0.0007%. The produced steel is not sensitive to flaking since the content of hydrogen reaches a lower limit of solubility in iron at room temperature. The content of nitrogen in rimming steel "reaches 30 to 50%" [of the initial value ?] and can be reduced still further by increasing the power of the vacuum pumping system. The vacuum treatment brings about a considerable increase in the ductility of the steel without affecting the high strength; in the case of alloying with 0.1 to 0.15% V, an increase of the ultimate strength of 20% is achieved whereby the impact strength remains at the level of ordinary steel. After normalisation annealing, the impact strength is increased to 4-5 kg/cm^2. The thus produced rimming steel has good welding properties and is

Experience Gained in Vacuum Treatment of Bessemer Steel

not subjected to thermal ageing in the near weld zone; normalised vacuum steel is not sensitive to mechanical ageing, the impact strength of the specimens does not drop and in some cases even increases. In the case of vacuum treatment of liquid metal in the ladle degassing proceeds throughout the entire mass of the metal. It was mentioned in the discussion that these investigations are of great scientific and national importance and permit solving the problem of increasing the quality of the Bessemer steel without oxygen blowing of the iron.

(Note: This is a complete translation)

Card 3/3

USCOMM-DC-60.776

SOV/24-58-6-34/35

AUTHOR: M.S. Solomonov

TITLE: The Current State of Pneumatic and Hydraulic Automatics (the second All-Union Seminar on Pneumatic and Hydraulic Automatics) (Sovremennoye sostoyaniye pnevmo-gidro-avtomatiki (na vtorom vsesoyuznom seminare po pnevmo-gidroavlicheskoy avtomatike)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 6, pp 156-158 (USSR)

ABSTRACT: The second Seminar was held at the Institute of Automatics and Telemechanics on 17-19 March 1958. The main Russian centres and East European countries were represented. The president of Giprogaztopprom, V.A. Nikitin, dealt with crude oil-treatment processes as objects for automatic control, and with the devices needed for full-scale automatic working in such processes. R.A. Auzan (TsNIIKA, Moscow) dealt with methods and results in relation to experimental studies on BRB-9A and BP-27 automatic control units. The structural diagram of the regulator was given, with transfer functions and other relevant features. L.L. Feygel'son (Tsvetmetavtomatika) briefly reviewed Soviet and foreign designs of pneumatic

Card 1/5

The Current State of Pneumatic and Hydraulic Automatics

transducers, especially those for pressure, vacuum and pressure drop. V.M. Dobkin and M.L. Kurskaya (NIOP and K) and Yu.I. Ostrovskiy (Institute of Automatics and Telemechanics) dealt with various systems for controlling a two-component reaction, and with an automatic titrometer for assaying one of the products. Laboratory test results were given. E.M. Nadzhafov dealt with the work on pneumatic computing devices done at the Institute of Automatics and Telemechanics (IAT). Devices for extracting square roots and for dividing and multiplying were amongst those dealt with. A.A. Tal' also dealt with digital pneumatic computing devices that had been worked on at the Institute of Automatics and Telemechanics; the main part is a pneumatic relay. L.N. Zalmazon (IAT) discussed a new aerodynamic oscillation generator with no moving parts; air streams interact to produce the oscillations. Zalmazon and A.I. Semikova also dealt with aspects of the pneumatic dividing and multiplying device developed at IAT; V.N. Dmitriyev (IAT) dealt with a piston-operated pneumatic servo. Ye.V. Gerts of IMASh,

The Current State of Pneumatic and Hydraulic Automatics

Ac. Sc. USSR, considered the existing formulae for the effective forces or working areas of membranes in pneumatic power drives. A.I. Semikova dealt with pneumatic integrators, and ways of increasing their accuracies. V.D. Mironov discussed a series of electronic hydraulic regulators developed at the All-Union Heat Engineering Institute. Electronic amplifiers are used in conjunction with hydraulic (water) servos. Jan Hampl dealt with a similar type of regulator made at the Krizik-Smichov factory in Prague; the regulator is mainly used for voltage control purposes. B.L. Korobochkin (Stankozavod, Moscow) described a new lathe feed drive mechanism (hydraulically operated) with negative feedback. The response is almost linear and suitable for automatic control purposes. I.Z. Zaychenko (ENIMS) dealt with stability studies on hydraulic and compressed-air systems. The stability of hydraulic devices can be combined with the convenience of compressed air. P.Ye. Baloban and G.N. Makhan'kov dealt with standardized hydraulic regulators used in piped

The Current State of Pneumatic and Hydraulic Automatics

water supply systems. Piston-operated servos are much more reliable than membrane-type ones. L.S. Bron (Special Design Bureau 1) described hydraulic systems for self-actuating turret lathes (a new development in the USSR). A.F. Arkhangel'skiy (Chelyabinsk Tractor Works) described how the power handled by URS speed regulators had been increased without increasing the size. Ferner (Eastern Germany) dealt with "Pneumatic regulators and Computing Units"; pneumatic devices used in digital computing sections of automatic controls were described. Units that could be built up into various computing elements were detailed; low pressures (to 100 mm of water) are used. Josef Kveton, chief designer at the Regula-Viva works in Czechoslovakia, described pneumatic devices, divided into two groups: one from 0.2 to 1.0 atm, and the other from 0.7 to 3.5 atm. The latter set is meant for use with boiler systems. Balanced systems are used in the recording and indicating instruments; the control systems are built in unit form. A designer from Britall (Eastern Germany) described hydraulic automatics work, in

The Current State of Pneumatic and Hydraulic Automatics

which remote-controlled systems for use in chemical plants were dealt with. A special feature is that pneumatic and hydraulic systems are combined, and that high pressures and corrosive atmospheres are envisaged. M.A. Ayzerman summed up the results presented, and emphasized new features (combined pneumatic and hydraulic systems, pneumatic computers, low-pressure pneumatic devices).

SOV/24-58-7-34/36

AUTHOR: Solomonov, M.

TITLE: Accuracy and Interchangeability of Technical Measurements in Machine Construction (Voprosy tochnosti, vzaimozamenyayemosti, tekhnicheskikh izmereniy v mashinostroyenii)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958 Nr 7, p 151 (USSR)

ABSTRACT: A scientific session of the Komissiya po tekhnologii mashinostroyeniya AN SSSR (Committee of Machine Construction Technology of the Ac.Sc., USSR) was held on May 9, 1958. Academician V.I. Dikushin surveyed some Soviet successes in this field and discussed unsolved problems quality control, automation and standardisation, the latter being of special importance with decentralisation of industry. Ye.R. Dvoretskiy, chief engineer of the Byuro vzaimozamenyayemosti (Interchangeability Bureau) outlined the research and design work of the organisation and discussed co-operation with other bodies. Its aims also include the establishment of working standards, waste prevention, development of new types of measuring instruments and improvements in the accuracy of measurements in machine construction. A.N. Kurapov reported work on machining accuracy

Card 1/2

Accuracy and Interchangeability of Technical Measurements in Machine Construction

with automatic machine tools in instrument production, carried out at the Kafedra tekhnologii aviatsionnogo priborostroyeniya (Aviation Instrument Construction Technology [illegible] of MAI. I.I. Naumov of MIAT in his paper considered blade production for gas-turbine motors, while K.A. Gipp reported on work at the Nauchno-issledovatel'skiy institut avtomobil'noy tekhnologii (Automobile Technology Scientific Research Institute). Other papers dealt with a new photo-pneumatic element, instruments for ball-bearing quality control and for gauging mould accuracy, the matching of teeth with protective coverings, new radioactive control methods and other subjects.

Card 2/2

SOV/24-58-7-35/36

AUTHOR: Solomonov, M.

TITLE: First Conference on the Theory of Gravitational Methods of Concentration (Pervoye soveshchaniye po teorii gravitatsionnykh metodov obogashcheniya)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 151 - 152 (USSR)

ABSTRACT: On May 14, 1956 a conference was held at Institut gornogo dela Akademii nauk SSSR (Mining Institute of the Ac.Sc., USSR) jointly with the Tsentral'noye pravleniye Nauchno-tekhnicheskogo gornogo obshchestva (Central Board of the Scientific and Technical Mining Society) on gravity concentration methods. Bodies participating included the Moskovskiy gornyy institut (Moscow Mining Institute), Mekhanobr Institute and the Magadanskiy nauchno-issledovatel'skiy institut (Magadan Scientific Research Institute). The conference heard with special interest reports on new ideas on stratification in jigging and the influence of various factors on jigging and various applications of this process. Other reports indicated that important work on the development of techniques and apparatus for gravity concentration of a wide variety of materials is proceeding

Card 1/2

First Conference on the Theory of Gravitational Methods of Concentration

at several institutes. The conference noted the promising results in investigations of jigging being obtained by new methods and discussed research programmes. The need for developing models of centrifugal jigging machines was indicated.

SOLOMONOV, M.

Scientific technical conference on designing new - type equipment for electric power station units using superheated steam. Izv. AN SSSR. Otd.tekhn.nauk no.7:152 Jl '58. (MIRA 11:9)
(Electric power stations) (Steam, Superheated)

AUTHOR: Solomonov, M. SOV/24-58-8-35/37

TITLE: Scientific Conference on the Problems of the Water Regime, Water Preparation and Ensuring Steam Purity in Atomic Power Stations (Nauchno-tekhnicheskaya sessiya po voprosam vodnogo rezhima, vodopodgotovki i obespecheniya chistoty para na atomnykh elektrostantsiyakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 8, pp 158-159 (USSR)

ABSTRACT: This conference was held on May 26-28, 1958. Ten papers were read, including the following:
M. A. Styrikovich (ENIN, Ac.Sc. USSR) "Features of the processes of steam generation in atomic power stations";
T. Kh. Margulov, O. I. Martynov (MEI) "Features of the water regime in atomic power stations";
F. G. Prokhorov (VTI) "Water preparation in atomic power stations";
P. A. Akol'zin (MEI) "Corrosion of the structural steels of atomic power stations";
Z. L. Miropol'skiy (ENIN, Ac.Sc. USSR) "Radioactive contamination of the steam-water channels of atomic power stations";

Card 1/3

SOV/24-58-8-35/37

Scientific Conferences on the Problems of the Water Regime, Water Preparation and Ensuring Steam Purity in Atomic Power Stations

L. I. Katkovskiy (MEI), D. G. Tskhivirashvili (Power Institute, Ac.Sc. Georgia SSR) "Investigation of the solubility of inorganic compounds in steam and its influence on the operation of atomic power stations"; G. G. Bartolomey (ENIN, Ac.Sc. USSR) "Determination of the influence of suspensions on the swelling of the level at atmospheric pressure"; V. K. Zavoyskiy, V. N. Vorob'yev, R. L. Serdyuk (Laboratory of Thermal Technology, Ac.Sc. USSR) "Dependence of the density of steam-water mixtures on the diameter of the tubes and on the derived speed of steam at atmospheric pressure". The presented papers justified the conclusion that investigations in the field of design of reactors and steam generators aimed until recently mainly at studying the physical processes and the heat exchange. The state of the water regime, the technology of water systems and the methods of producing pure steam in atomic power stations has not been paid sufficient attention in research institutes and higher teaching establishments. The disclosed information indicates that, in the fields of water preparation, water regime, corrosion

Card 2/3

Scientific Conferences on the Problems of the Water Regime, Water Preparation and Ensuring Steam Purity in Atomic Power Stations

and steam purity in atomic power stations, the following work is at present being carried out: Investigation of the water regime, investigation of methods of producing pure steam and of transfer of radio-activity in atomic power stations, investigation of the bubbling process as applied to homogeneous and heterogeneous reactors and investigation of the synthesis of ion exchange materials for water preparation. Furthermore, corrosion processes are also under investigation. The conference has established that a number of design specifications relating to the content of suspensions and dissolved elements in the steam do not comply with the requirements of the fast-developing atomic power generation industry (contents of chlorides in the blow-down water of the steam generators, sodium content in the steam).

1. Atomic power plants--Water supply 2. Atomic power plants--Operation
Card 3/3 3. Water--Impurities 4. Steam--Impurities

AUTHOR: Solomonov, M. 137/24-58-8-36/37

TITLE: Theoretical and Experimental Problems of Friction, Wear and Lubrication of Machinery (Teoreticheskiye i eksperimental'nyye voprosy treniya, iznosa i smazki mashin)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 8, p 159 (USSR)

ABSTRACT: Between April 9 and 15, 1958 the third All Union Conference on friction and wear was held at the Institute of Machinery, Ac.Sc. USSR. Over 800 delegates from various industrial centres participated, including over 400 representatives of research establishments and laboratories, 170 representatives of higher teaching establishments and over 170 representatives of Works and administrations. Specialists from Czechoslovakia, Rumania and Hungary also participated. In the plenary session the following introductory papers were read: "Present Trends in the Development of the Hydrodynamic Theory of Lubrication" by Ye. M. Gut'yar; "Certain New Problems in the Field of Lubrication and Lubricating Materials" by G. V. Vinogradov; "Present-day Problems of

Card 1/3

Theoretical and Experimental Problems of Friction, Wear and Lubrication of Machinery

Boundary Lubrication" by B. V. Deryagin; "Development of the Study of Dry Friction" by I. V. Kragel'skiy; "Present Trends in the Development of the Science on Wear and Wear Resistance" by M. M. Khrushchov. 150 papers were read in sectional meetings. The papers and the discussions which followed showed that during the recent period accurate metal-physics methods of investigation of the active layers of the metals during friction have been developed. In the section dealing with the hydrodynamic theory of lubrication and sliding bearings, investigations were described relating to the operation of bearings taking into consideration the temperature conditions and the variable viscosity of the oil layer and also investigation of aerodynamic lubrication. In the papers read in the section on lubrication and lubricants, the following were considered: additives ensuring the possibility of using oils of various origin in machinery and I.C. engines of various types, including those operating with sulphurous diesel fuel; high polymer additives to high viscosity oils

SOV/24-58-8-36/37

Theoretical and Experimental Problems of Friction, Wear and Lubrication of Machinery

intended for operation at low temperatures; greases based on synthetic acids, etc. The trend of further investigations in the various fields under discussion were outlined.

(Note: This is a complete translation)

1. Machines--Lubrication 2. Bearings--Friction 3. Abrasion
4. Lubricant additives 5. Lubricants--Theory 6. Bearings--Lubrication

Card 3/3

SOLOMONOV, M.S.

Problems of combustion and carburetion in diesel engines. Izv. AN SSSR. Otd. tekh. nauk no.9:156-157 S '58. (MIRA 11:10)
(Diesel engines)

SOLOMONOV, N.S.

General meeting of the Department of Technological Sciences of the Academy of Sciences of the U.S.S.R. in June 1958. Izv. AN SSSR Otd. tekh. nauk no.9:157-160 S '58. (MIRA 11:10)
(Academy of Sciences of the U.S.S.R.)

SOV/24-58-10-34/34

AUTHOR: Solomonov, M. S.

TITLE: Conference on Water Preparation in Thermal Power Stations (O vodopodgotovke na teplovykh elektrostantsiyakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 159-160 (USSR)

ABSTRACT: During June 24-27, 1958, a conference took place on problems of water preparation in thermal power stations of high, intermediate, super-high and super-critical pressures. The conference was convened by the Commission on Steam of Very High Parameters of the Power Research Institute, Academy of Sciences USSR, imeni G. M. Krzhizhanovskiy, jointly with the Ministry of Power Stations USSR and the Moscow Scientific-Technical Society of the power industry. Over 400 representatives of scientific research establishments and of power stations participated. In the section on design, setting and operation of combined plant with magnesium desilisizing, the following papers were read:
1) "Experience in setting up and operation of water treatment plant with desilisizing by means of magnesium", V. F. Gvozdev (ORGRES),
2)"State and tasks in the development of plant for magnesium desilisizing of water in thermal power stations", V. M. Kvyat-

Card 1/5

Conference on Water Preparation in Thermal Power Stations

kovskiy (VTI),
3) "Schemes of automation of plant with desilisizing by means of magnesium", Ye. N. Krasotkin and V. M. Kvyatkovskiy (VTI),
4)"Problems of designing combined cathion water treatment plants with magnesium desilisizing", A. A. Krupchitskiy (Khar'kovskoe otdeleniye TEP),
5) "Desilisizing of the water by means of filters", O. N. Shemyakin (VODGEO),
6)"Investigation of the process of magnesium desilisizing of water at elevated temperatures", L. M. Zhivilov (VTI),
7)"Magnesium-cathion method of desilisizing water", L. S. Foshko (Donbassenergo).

In the second section, "Experience in designing, setting and operation of chemical desalting plant", the following papers were read:

1) "Results of investigations and of industrial tests of chemical desalting plant and prospects of their application in thermal power stations with super-high and above-critical steam parameters", F. G. Prokhorov (MES SSSR),

Card 2/5

Conference on Water Preparation in Thermal Power Stations

2) "New ionites for water preparation plant and prospects of their industrial manufacture", A. V. Pashkov (Institut plastmass im. Frunze),
3)"Problems of design of chemical desalting plant", V. S. Chernov (KhOTEP), I. M. Sokolov,
4) "Automation of pressure filters for water treatment in power stations", S. M. Gurvich (MOTsKTI).

In addition to these papers, 20 informative communications of various local representatives were presented. It transpired that during recent years methods of magnesium desilisizing and of thorough chemical desalting of water have gained extensive utilisation in Soviet power stations and these played an important role in the development of Soviet steam power. Successful mastering of magnesium desilisizing of water together with the application of stepwise evaporation in boilers, washing of steam and other measures enabled ensuring reliable and economic exploitation of high pressure (110 atm) boilers in combined heat and power stations which operate with a large loss of condensate. During recent years rational designs of illuminators have been developed and also methods for dry dosing of caustic magnesite as well as mechanization of its handling and an original method was described

Conference on Water Preparation in Thermal Power Stations

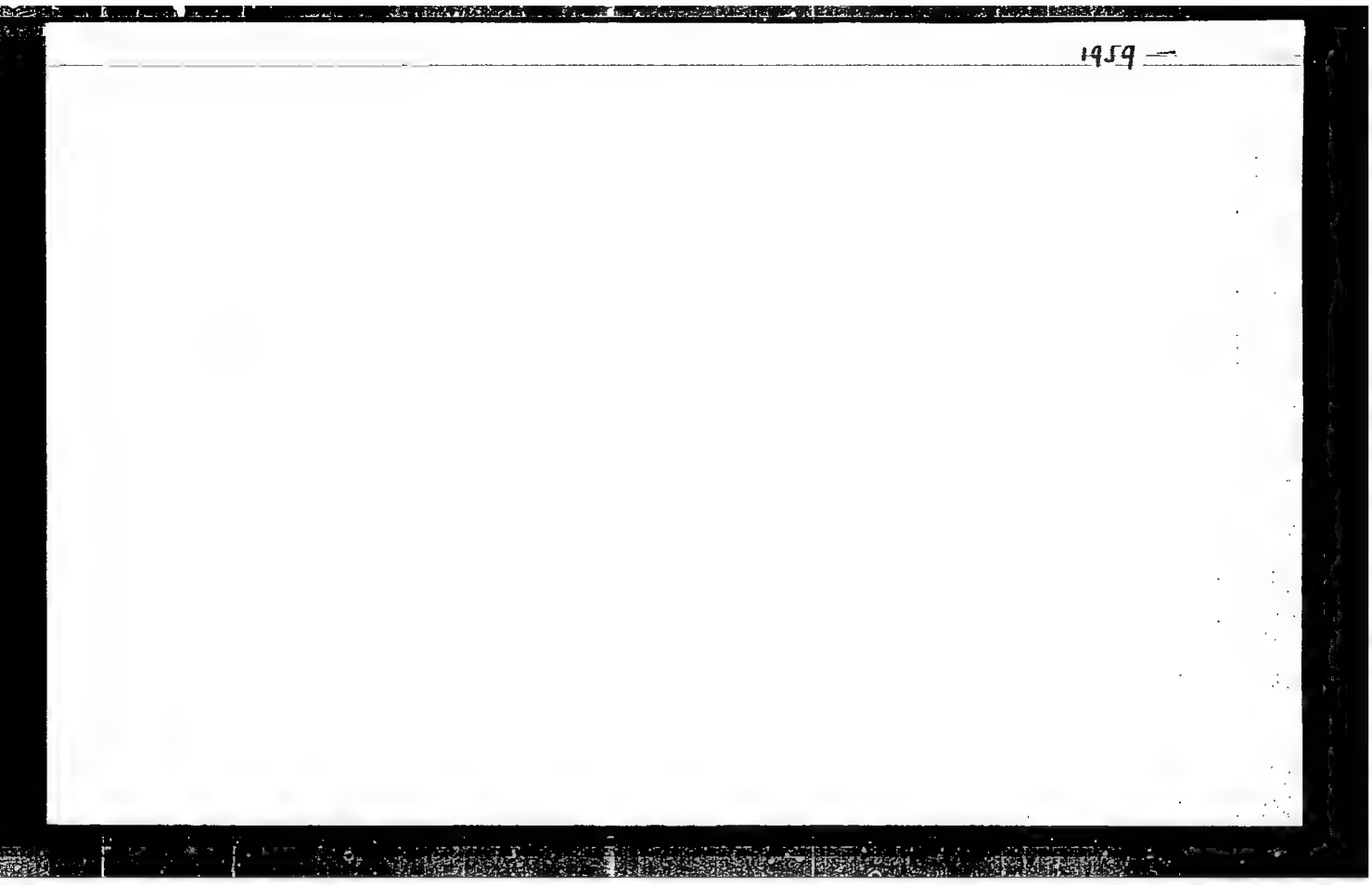
of desilisizing by applying lime on the preliminarily magnesium-cathionated water. In individual cases it became possible to feed the water directly from the illuminators into cathion filters of the first stage, in which the processes of filtration and cathion treatment are combined. Work has started on automation and mechanisation of preliminary purification and of introducing treatment involving high temperature pre-heating of the water. Water treatment by application of lime and in individual cases by simultaneous desilisizing by magnesium in the case of heating up to 120°C permits more thorough elimination of silicon compounds. High temperature desilisizing requires special apparatus operating under pressure, thermally stable cathions and also new automatic circuits. Laboratory, semi-industrial and industrial tests of the filtration method of desilisizing water, developed by VODGEO have shown that this method is applicable also for H-a cathionated water without preliminary application of lime. In chemical desalting plants which use ionites of Soviet manufacture, it became possible to solve the problem of feeding very high pressure drum boilers (180 atm) and thus extensive prospects are opened up of using thoroughly desalted natural

Conference on Water Preparation in Thermal Power Stations

water and condensates for feeding powerful direct flow boilers of super-critical pressures. An ionite method of purification of condensates of nitrogen-fat plants permits utilising desalted condensate for feeding high pressure boilers and returning regeneration products into the technological cycle of the plant for producing from it the industrial product. Such a process of purification of the waste condensates allows reducing operational costs for water treatment and feeding of industrial heat-power stations in chemical works. Various deficiencies were pointed out in the existing technology of water purification as well as in the designs adopted in some of the projects.

Card 5/5

USCOMM-DC-60,653



AUTHOR: Solomonov, M. SOV/180-59-1-27/29

TITLE: Conference at the Leading Ore-Mining Combine in Tyrny-Auz (Kabardino-Balkariya) (Soveshchaniye na peredovom kombinate gornorudnoy promyshlennosti v Tyrny-Auze (Kabardino-Balkariya))

PERIODICAL: Izvestiya Akademii nauk,SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959,Nr 1, p 123 (USSR)

ABSTRACT: A conference was convened on 15-18th September 1958 at the Tyrny-Auz Combine by the Institut gornogo dela Akademii nauk SSSR (Mining Institute of the Academy of Sciences of the USSR), Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta ministrov SSSR (State Scientific and Technical Committee of the Council of Ministers of the USSR), the Kabardino-Balkarskiy sovnarkhoz (Kabardino-Balkariya Economic Council) and the Nauchno-tekhnicheskoye obshchestvo tsvetnoy metallurgii (Scientific and Technical Society for non-ferrous Metallurgy). The following reports were presented: M.N. Yermolenko, GITK (probably a mistake for GNTK (State Scientific and Technical Committee) - Abstractor) of the Council of Ministers of the USSR, "Main Lines for Technical Development in the Underground Mining of Ores

Card 1/3

Conference at the Leading Ore-Mining Combine in Tyrny-Auz (Kabardino-Balkariya)

of Non-Ferrous and Rare Metals in 1959-1965"; M.I. Agoshkov, IGD AN SSSR (AS USSR), "Improvement in the Methods of the Underground Working of Large Deposits of Hard Ores"; V.G. Druzhkov, TsNIGRI, "Experience in the Use of the Single-Stage Method of Working Deposits Under Conditions Preserving the Surface from Caving"; A.A.Popov, Institut Unipromed (Unipromed Institute), "Experience in the Working and Safety Precautions of Inflammable Ural Ores"; A.G. Shpital'nikov Institut Giprotsvetmet (Giprotsvetmet Institute), "Economic Effectiveness of Using Powerful Equipment in Working Large Deposits"; D.P. Bobrov, "Work of the VNIIBT Institute on the Production of Modern Boring Equipment"; D.M. Bronnikov (Mining Institute AS USSR), "Comparative Evaluation of Methods of Charge Drilling in Hard Ores"; N.A. Chinakal, Sibirskoye otdeleniye AN SSSR (Siberian Department of the AS USSR), "Shield Propping in Working Large Luzbass Seams and the Possibility of Using this Propping System in Working Ore Deposits"; A.V. Bud'ko and L.I. Burtsev (Mining Institute AS USSR), "Systems of Working Large Hard-Ore Deposits in Foreign Quarries";

Card 2/3

SOV/180-59-1-27/29

Conference at the Leading Ore-Mining Combine in Tyrny-Auze (Kabardino-Balkariya)

V.V. Nedin, IGD Ukr SSR (Mining Institute Ukr SSR), "Ways of Combating Dust in Mining Operations". After this the conference heard reports on work at the Noril'skiy kombinat (Norilsk combine), the Nikitovskiy rtutnyy kombinat (Nikitovka combine), the "Verkhniy" rudnik ("Upper" quarry) of the kombinat Sikhali (Sikhote-Alin'deposits) of the Degterskoye mestorozhdeniye (Degtyarskoye deposit) Leninogorskiy kombinat (Leninogorsk combine), Tyrny-Auzskiy kombinat (Tyrny-Auz combine), Salairskiy rudnik (Salair quarry) and the Dzhezkazganskoye mestorozhdeniye (Dzhezkazgan deposit). The conference decided on measures for improving mining.

Card 3/3

SOV/180-59-1-28/29

AUTHOR: Solomonov, M.S.

TITLE: Conference on the Physics of the Disruption of Rock and Tool Wear (Soveshchaniye po fizike razrusheniya gornykh porod i iznosu instrumentov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 1, pp 123-124 (USSR)

ABSTRACT: On 18-20 November 1958 a conference was held at the Institut gornogo dela AN SSSR (Mining Institute AS USSR). One group on the physics of rock breakdown, heard the following reports: A.N. Zelenin, (IGD AN SSSR), on "Some Investigations in the Field of Mohr's Ring Construction"; A.I. Beron, VUGI, on "Physical Nature of Effects in the Cutting of Brittle Rocks"; R.Ye. Eygeles, VNIIBT, on "Mechanism of Rock Breakdown in Static and Dynamic Insertion of Punches"; V.P. Samoylov, NIIOSP, and Shih Chung-han (MIIT) on "Experimental Investigation with the Aid of Radioactive Isotopes of the Process of the Introduction of Symmetrical Wedges (Stamps) into Rocks"; V.M. Matrosov, Tomskiy politekhnicheskiy institut (Tomsk Polytechnical Institute), on "The Breakdown of Rock in Vibration-Rotation Drilling by the Core Method".

Card 1/3

Conference on the Physics of the Disruption of Rock and Tool Wear

The second group, dealing with tool durability, heard the following reports: A.V. Kuznetsov (IGD AN USSR) on "Abrasive Properties of Rocks and Their Influence on Drill-Edge Blunting (in Perforation Drilling)"; M.I. Smorodinov, NIIOSP, on "Investigation of Rock-Cutting Tool Wear with the Aid of Radioactive Isotopes"; V.V. Sevast'yanov, VUGI, on "Investigation of Tool Durability in the Course of Impact Chipping of Rocks"; I.A. Ter-Azar'yev, AISM, on "Main Stages in Cutting-Tool Wear in Stone Cutting"; K.S. Vartanyan, AISM, on "Local Tool-Wear in Stone Cutting and Friction Work"; G.C.Karyuk, Novocherkasskiy politekhnicheskiy institut (Novocherkassk Polytechnical Institute) on "Investigation of ShBM-Combine Cutting-Tool Wear"; V.F. Kiriyenko, Opytno-issledovatel'skiy tsekh Noril'skogo kombinata (Experimental-research department of the Noril'skiy combine) on "Increasing the Durability of the Drilling Tool and the Drillability of the Gabbrodiabases of the Noril'sk Deposits"; B.N. Lyubimov on the "Work of Giprouglemash". Afterwards communications were presented by representatives of the Dnepropetrovskiy gornyy institut (Dnepropetrovsk Mining Institute), Novocherkasskiy politekhnicheskiy

Card 2/3

Conference on the Physics of the Disruption of Rock and Tool Wear --59-1-28/29

institut (Novocherkassk Polytechnical Institute), Khar'kovskiy gornyy institut (Khar'kov Mining Institute), Kazakhskiy gorno-metallurgicheskiy institut (Kazakh Mining and Metallurgical Institute) and others. The conference noted that little work had been done on some of the subjects discussed. It recommended that work on the physics of rock disruption should be carried out mainly at the IGD AN USSR, the Institut geologii i dobychi poleznykh iskopayemykh AN SSSR (Institute of Geology and Extraction of Minerals, AS USSR) VUGI and VNIBT; and work on tool wear and breakage preferentially at NPI, AISM, Gidrouglemash, VUGI, VNIIBT and the Institut tverdykh splavov (Hard-Alloys Institute).

Card 3/3

AUTHOR: Solomonov, M.S. SOV/180-59-1-29/29

TITLE: Conference at the Mining Institute of the AS USSR. Short-Delay Method of Rock Blasting (Soveshchaniye v institute gornogo dela AN SSSR. Korotkozamedlennyy sposob vzryvaniya gornykh porod)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 1, p 124 (USSR)

ABSTRACT: On 26-28 November 1958 a conference was held at the Mining Institute to discuss problems involved in rock blasting by the short-delay method. The conference was organised by the Mezhduvedomstvennaya komissiya po vzryvnomy delu (Joint Blasting Committee) of the Institute and the Tsentral'noye pravleniye nauchno-tekhnicheskogo gornogo obshchestva (Central Management of the Scientific and Technical Mining Society). The conference discussed the development of the method and noted problems for solution. It recommended that the Institut fiziki zemli AN SSSR (Institute of Physics of the Earth of the AS USSR) should develop a lighter portable device for measuring the seismic waves produced by explosions and, together with the PEU and the Soyuzvzryvprom, develop a

Card 1/2

Conference at the Mining Institute of the AS USSR. Short-Delay Method of Rock Blasting

standard procedure for carrying out investigations and measurement of such effects.

Card 2/2

USCOMM-DC-60,891

SOV/24-59-1-32/35

AUTHOR: Solomonov, M.S.

TITLE: November General Meeting of the Section of Technical Sciences (Noyabr'skoye obshchaye sobraniye otdeleniya tekhnicheskikh nauk)

PERIODICAL: Izvestiya Akademii Nauk, SSSR, Otdeleniye Tekhnicheskikh Nauk, Energetika i Avtomatika, 1959, Nr 1, pp 142-143 (USSR)

ABSTRACT: A general meeting of the Section of Technical Sciences took place on November 4th and was opened by a long lecture by the Corresponding Member of the Academy of Science of the USSR, A.N.Larionov, who dealt with the problem of hard magnetic materials. Larionov reviewed the present state of hard magnetic materials in the Soviet Union. From this survey it was obvious that the materials are very important in modern engineering. The speaker indicated that the magnets of hard magnetic materials could be divided into the following types: cast magnets which provide a very high energy; metal-ceramic magnets; pressed magnets; ferrite-barium oxide magnets and anisotropic barium magnets. The speaker gave a detailed analysis of the properties of those magnets and the materials employed in them; he also

Card 1/4

November General Meeting of the Section of Technical Sciences

analysed the machines in which such magnets are best employed. The lecture was followed by a discussion during which the participants of the meeting adopted a resolution emphasising the importance of hard magnetic materials in radar, aviation, radio engineering, instrument industry and machine industry. The second speaker was V.A.Il'in, who discussed the new trends in telemechanics, in particular the problems investigated in the laboratory headed by the speaker. The work of the laboratory could be divided into the following sections: (1) investigation of the noise suppressibility in the transmission of signals for various types of modulation and signal separation; the work is largely based on the theory of the potential noise suppressibility by the Academician V.A.Kotelnikov; (2) investigation of the noise suppressibility in the presence of a comparatively strong fluctuation and pulse noise; (3) investigation of the possibility of increasing the noise suppressibility by employing the statistics of the signal; (4) study of the statistical

November General Meeting of the Section of Technical Sciences

characteristics of the actual interference in various communication systems employed in telemechanics. The results of the investigations in the above field showed the existance of an optimum channel transmission bandwidth and the possibility of determining this bandwidth for various types of modulation. The next lecture, by M.A.Ayzerman, was devoted to the problem of employing the pneumatic methods for performing various mathematical operations (including logical operations). The speaker gave a summary of the work carried out by a laboratory (IAT) of the Academy of Sciences of the USSR. He mentioned various types of pneumatic devices, in particular analogue computers of the continuous type. An equipment capable of adding 12 quantities was mentioned. This equipment contained no moving parts and was in the form of a pneumatic chamber whose pressure was proportional to the sum of the pressures applied to it. Devices such as a differentiator, an integrator, a square-root extractor and a multiplier-divider were also described.

November General Meeting of the Section of Technical Sciences

The final lecture was delivered by Yu.A.Sabinin, who discussed the automation of the electrical equipment in telescopes.

SOV/24-59-1-33/35

AUTHOR: Solomonov, M.S.

TITLE: Scientific Conference on Long Distance Electric Power Transmission (Nauchnoye soveshchaniye po voprosam peredachi elektricheskoy energii na dal'nem rasstoyanii)

PERIODICAL: Izvestiya Akademii Nauk, SSSR, Otdeleniye Tekhnicheskikh Nauk, Energetika i Avtomatika, 1959, Nr 1, p 144 (USSR)

ABSTRACT: On October 7-11th 1958, a meeting was held at the Power Institute Imeni G.M.Krzhizhanovskiy, on problems of long distance power transmission. The meeting was convened by the Commission for Long Distance Power Transmission at the Power Institute jointly with the Central Board of the Scientific and Technical Association of the Power Industry. 250 representatives of 74 organisations participated in the meeting. The following main papers were read: "Basic Operational Principles of Frequency Regulation and Distribution of the Active Powers in the YeES" by I.M.Markovich (ENIN); "Contribution to the Analysis of Structural Schemes of Systems of Automatic Regulation of the Active Power and Frequency in Power Systems" by Ye.I.Yurevich (LPI); "Experience gained in Introducing Systems of Remote

Card 1/3

Scientific Conference on Long Distance Electric Power Transmission

Control of the Frequency and the Power according to the ORGRES Method" by L.D.Sterninsona (ORGRES); "Automation of the Frequency Control and Distribution of Active Loads" by V.M.Gorshteyn (VNIIE); "On the Problem of the Selection of the Economically Most Favourable Distribution of Connection of Standby Capacity in Power Systems" by V.M.Gorshteyn; "Automation of the Distribution of Active Loads in Power Systems by G.M.Pavlov, V.A.Slabikov (LPI); "Features of Operation of Hydraulic Power Stations and their Influence on the Method of Determination of the Most Favourable Regimes of Power Systems" by N.A.Kartvelishvili (VNIIE); "Regimes of Power Systems and Theory of Probability" by N.A.Kartvelishvili; "Study of the Problem of the Technique of Determination of the Economically Most Favourable Regime of Operation of Power Systems Containing Hydraulic Power Stations" by V.M.Gorshteyn; "Methods of Calculation of Optimum Regimes of Hydraulic Stations with Long-term Regulation" by Ye.V.Tsvetkov (VNIIE);

Card 2/3 "Principles of the Most Favourable Distribution of the

Scientific Conference on Long Distance Electric Power Transmission

Load between Hydraulic and Thermal Power Stations from the Point of View of Automation" by N.G.Zaytsev (LPI). The work of the meeting showed that in spite of the success gained in complex automation of individual power stations, particularly of large hydraulic power stations, the standard of automation of the technological process of thermal power stations is in many cases inadequate for introducing an overall system of automation. Obsolete methods of planning and also the used system of economic indices of power stations have been criticised. It was pointed out that in the case of economical load distribution, it is necessary to take into consideration losses in the network both inside the power system and also in inter-connections between individual systems.

Card 3/3

S/024/59/000/06/028/028
E194/E155

AUTHOR: Solomonov, M. S

TITLE: The September General Meeting of the Technical Science Division (of AS USSR)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 6, pp 200-202 (USSR)

ABSTRACT: A General meeting of the Technical Science Division of the AS USSR was held on the 29 September, 1959, with Acad. L. D. Shevyakov in the Chair. The first report was read by Corresponding Member AS USSR N. V. Mel'nikov and dealt with improved methods of open-cast working for minerals. The productivity of labour on open-cast workings is increasing considerably. This is desirable, because large open-cast workings are included in the Seven Year Plan, for instance, at the Kursk Magnetic Anomoly, at the iron ore workings of the Kustanayskiy region and at Krivoy Rog. There are also the copper ore workings at Gaysk, the coalfields in the Krasnoyarsk region, the Yakutsk diamond fields and others. The contents of the report are briefly given. The following participated in the discussion: Corresponding Member

Card 1/4

S/024/59/000/06/028/028
E194/E255

The September General Meeting of the Technical Science Division (of AS USSR)

AS USSR B. K. Aleksandrov, Professor N. G. Dombrovskiy, (of the State Committee on Automation and Engineering of the Council of Ministers of the USSR), M. M. Sokolovskiy (of GOSPLAN USSR), and I. B. Shlayn of the Scientific Research Institute of Reinforced Concrete. The meeting approved the general trends of improvement in open-cast workings described by the reporter and also approved the related scientific activity of the Mining Institute (Institut Gornogo Dela) of the AS USSR. The Institute was recommended to carry out the following investigations (a) to investigate flow schemes of open-cast working, ensuring the automation of all production processes in quarries, including those in difficult climatic and geological conditions; (b) to develop basic designs of high-output quarrying machinery with programmed control; and (c) the effective development of workings in complicated hydro-geological conditions and at great depths. The next report was read by Doctor of Technical Sciences, N. N. Shumilovskiy (the co-reporter was Candidate of Technical Sciences L. V. Mel'ttser). It

Card 2/4

S/024/59/000/06/028/028
E194/E255

The September General Meeting of the Technical Science Division (of AS USSR)

dealt with the scientific basis of automatic methods of control using nuclear radiation. The report reviewed control methods employing radioactive isotopes and nuclear radiation. The meeting approved the main results of the work on the development, investigation and introduction into industry of automatic control methods, utilising atomic radiation. It was considered advisable to direct this work towards (1) development of the scientific basis of automatic control using nuclear radiation, including analysis of the accuracy of these methods under static and dynamic conditions; (2) the development of new methods of automatic control using radio active isotopes, particularly for controlling the composition of complicated substances and mixtures, and for automatic inspection and detection by the use of controlled neutron sources. The meeting stated that insufficient work was being done in this field by the AS USSR. The third report was read by Doctor of Technical Sciences B. V Kantorovich, and dealt with the combustion

Card 3/4

S/024/59/000/06/028/028
E194/E255

The September General Meeting of the Technical Science Division (of AS USSR)

of liquid and solid fuels and of fuel-water emulsions in a flow of air. The reporter described his work at the laboratory of the Institute of Combustible Minerals (Institut Goryuchikh Iskopayemykh) of the AS USSR, where he is studying the main effects of combustion of fuel particles in a flow. In the decisions of the meeting it was stated that the process of combustion of particles of pulverised fuel in a flow is of great importance. Compression in the flow opens possibilities for mechanisation and automation and the development of new high-intensity processes of combustion. Investigations of the theory of combustion of particles of fuel in a flow and of associated problems should be promoted. The meeting approved the main trends of these investigations and advised further investigations of the theory with a view to its practical application.

Card 4/4

SOLOMONOV, M.S.

Problem of underground coal mining without the constant presence of miners at the wall. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.4: 190-191 Jl-Ag '60. (MIRA 13:9)
(Coal mines and mining)
(Automation)

SOLOMONOV, M.

Scientific Technological Conference on problems of the Kursk Magnetic Anomaly. Izv. AN SSSR. Otd. tekh. nauk. Met.i topl. no.5:239-240 S-O '60. (MIRA 13:11)
(Kursk Magnetic Anomaly--Congresses)

SOLOMONOV, M.

Belt conveyers are the most progressive and economical type of continuous transportation. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.2:188-189 Mr-Ap '61. (MIRA 14:4)
(Conveying machinery)

S/180/61/000/003/012/012
E111/E135

AUTHOR: Solomonov, M.

TITLE: Problems of the interaction of the foundry mold and the casting

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1961, No.3, pp. 199-200

TEXT: On 25-28 January 1961 the 7th Conference devoted to the problem of mould-casting interaction was held at the Institut mashinovedeniye AN SSSR (Institute of Science of Machines, AS USSR). The conference was organized by the Komissiya po tekhnologii mashinostroyeniya (Commission on the Technology of Machine Construction) at IMASH. The conference was opened by Academician V.I. Dikushin who gave its main purpose as the dissemination of experience gained in investigations to find the relationships involved, with the object of selecting the best practice. The following papers were presented:
"The problem of the operation of the foundry mould" by B.B.Gulyayev;
"The influence of heat exchange between liquid metal and mould on the peculiarities of structure of cast iron and steel castings" by A.A. Gorshkov; "The influence of the mould on the quality of the

Card 1/6

S/180/61/000/003/012/012
E111/E135

Problems of the interaction of the foundry mould and the casting

casting" by P.P. Berg; "Theory of gas formation in the mould" by A.A. Ryshikov and A.F. Spasskiy; "Methods of regulating and calculating the cooling of castings in the mould" by O.Yu. Kotsyubinskiy; "Regulation of cooling rate of castings in the mould" by B.V. Rabinovich and B.V. Babushkin; "Control of hardening processes of a complex casting" by G.A. Anisovich; "Investigation of forced cooling of castings in sand mould" by A.A. Kornilov, V.D. Repkin, G.V. Vartsukov and V.D. Oreshkin; "Forced cooling of large steel castings in the mould" by V.V. Shiryayev, P.G. Nivikov and P.N. Bidulya; "Investigation of the interaction between metal and casting of moulds in teeming of steel" by Yu.P. Solntsev, E.A. Ivanov and B.B. Gulyayev; "Control of the solidification process of the top of a large steel ingot" by V.A. Malyshev; "Investigation of processes of interaction of the mould and secondary cooling systems with the billets in continuous casting" by N.N. Guglin and B.B. Gulyayev; "Investigation of the thermal work of moulds used in the continuous casting of steel" by A.I. Chizhikov, L.I. Morozenskiy

Card 2/ 6

S/180/61/000/003/012/012
E111/E135

Problems of the interaction of the foundry mould and the casting

and O.D. Zigel'; "Press mould operation in pressure casting" by I.I. Goryunov; "Metal shell moulds" by B.Yu. Feygel'son; "The force of the interactions between casting and mould during the process of heat exchange" by G.F. Balandin and Yu.A. Stepanov; "Stresses and deformations in box casting due to mould resistance" by A.M. Gerchikov and O.Yu. Kotsyubinskiy; "The influence of conditions of heat removal from a large steel casting on its quality" by P.F. Vasilevskiy and L.Ye. Plotinskiy; "Methods of evaluating properties of moulds and metals in the temperature range of hot crack formation in castings" by Yu.A. Stepanov; "Linear shrinkage of steel during cooling in the mould and hot crack formation in castings" by N.A. Trubitsin; "The influence of reaction processes between castings and moulds on the quality of the cast surface" by F.D. Obolentsev; "Investigation of interaction processes of fused high-melting chemically active metals with mould material" by A.A. Demidova and B.B. Gulyayev; "Fluidity of steel and the surface cleanliness of a casting in relation to the parameters of the mould and casting process" by

Card 3/ 6

S/180/61/000/003/012/012
E111/E135

Problems of the interaction of the foundry mould and the casting

V.G. Gruzin and L.Ye. Plotinskiy; "The influence of a mould on the surface quality of castings" by V.O. Yakovlev; "Investigation of the physico-chemical interaction of alloys with mould materials" by B.V. Tsarevskiy, S.I. Popel' and V.A. Chechulin; "Firing and filling of shell moulds with a lost wax model" by I.B. Sokol; "Gating systems in casting in shell moulds" by G.M. Dubitskiy; "Surface alloying of cast iron castings with tellurium and other elements" by S.Ye. Utkin; "Gas pressure at the metal - mould boundary and the possibility of calculating mould elements for gas removal capacity" by A.A. Ryzhikov and A.F. Spasskiy; "Thermodynamic analysis of gas reactions in a foundry mould" by V.A. Chechulin and B.V. Tsarevskiy; "The influence of the intensity of cooling on the structure and properties of alloys" by I.B. Kumanin; "Influence of mould materials on casting properties" by A.N. Tsibrik; "Investigation of casting quality on using various cast materials and coatings" by I.F. Kolchin and V.V. Ryzhenkov; "Influence of mould temperature on the porosity of magnesium alloy castings" by M.V. Sharov and Ye.L. Bibikov;

Card 4/ 6

S/180/61/000/003/012/012
E111/E135

Problems of the interaction of the foundry mould and the casting

"Influence of the composition of mould mixtures on the density and mechanical properties of aluminium alloys" by M.F. Nikitina; "Improvement in the quality of a large steel casting by means of accelerated cooling in the hardening period" by P.G. Novikov, O.Yu. Kotsyubinskiy and M.V. Frolova; "Investigation of the influence of mould coatings on the quality of centrifugal castings" by Yu.P. Poruchikov, G.L. Khazan and R.I. Silin; "Investigation of precision casting processes in shell moulds of a mixture based on thermosetting resins" by A.M. Neymark.
The conference emphasized the importance of the subject matter in view of the 1965 target of 20.7 million tons of castings. Further study on the following lines was recommended: (a) experimental and theoretical investigation of processes taking place in the casting/mould contact zone; (b) development of scientific bases for the selection of mould materials; (c) further development of methods of investigating and checking the physico-chemical and technological properties of mould materials, which govern their interaction with the casting; (d) experimental and theoretical

S/180/61/000/003/012/012
E111/E135

Problems of the interaction of the foundry mould and the casting

investigation of processes taking place in sand and metal moulds; (e) the further development of methods for regulating moulding by altering mould parameters. The eighth conference should be held in 1962 to discuss: methods of determining mechanical properties of castings; principles of selecting alloys with set mechanical and foundry properties; influence of technological factors on mechanical properties of castings; results of investigations and producing norms for mechanical properties of castings of iron, steel and non-ferrous alloys; development of methods for raising the mechanical properties of castings.

Card 6/6

SOLOMONOV, M.

In the Institute of Mineral Fuels. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.4:175-176 Jl-Ag '61. (MIRA 14:8)
(Fuel research)

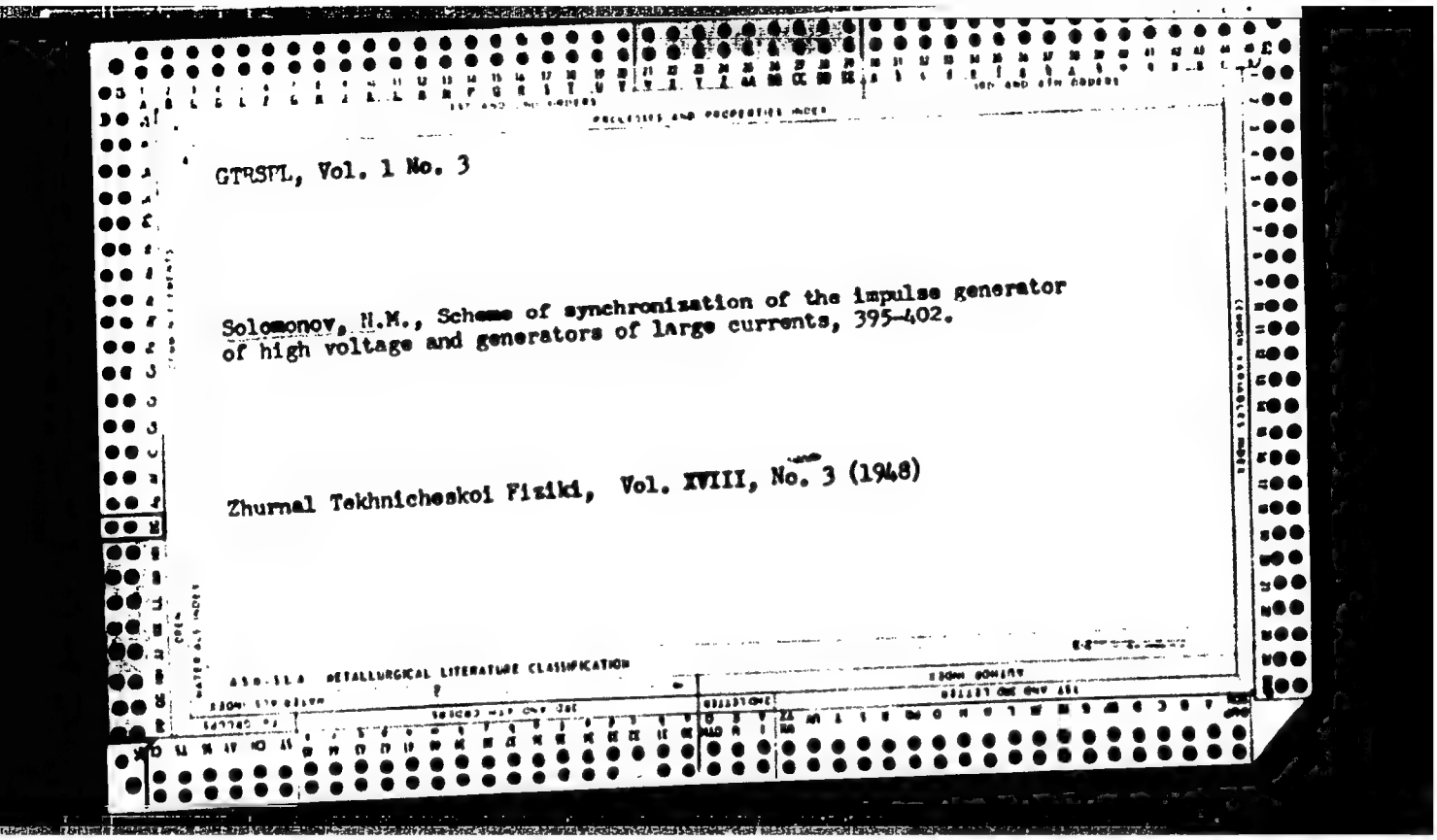
SOLOMONOV, I. ...

Efficient organization of gearwheel production. Vest.mash. 37
no.3:c-77 s '57. (MLRA 1...
(Gear cutting)

SOLOMONOV, N.G.

Population dynamics of the water vole in central Yakutia. Uch.zap. TGU no.36:250-261 '60. (MIRA 14:5)
(Yakutia--Water voles)

SOLOMONOV, N. G., CAND BIO SCI, "ECOLOGY OF THE WATER RAT (FIELD-MOUSE) IN CENTRAL YAKUTIA." TOMSK, 1961. (TOMSK STATE UNIV IM V. V. KUYBYSHEV). (KL, 3-61, 211).



GTPSTL, Vol. 1 No. 3

Solomonov, N.M., Scheme of synchronization of the impulse generator of high voltage and generators of large currents, 395-402.

Zhurnal Tekhnicheskoi Fiziki, Vol. XVIII, No. 3 (1948)

112-57-7-14350D

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 7, p 85 (USSR)

AUTHOR: Solomonov, N. M.

TITLE: A Synchronization Circuit for a High-Voltage Surge Generator and Heavy-Current Generators (Skhema sinkhronizatsii generatora impul'sov vysokikh napryazhniy i generatorov bol'shikh tokov)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to Leningr. politekhn. in-t (the Leningrad Polytechnic Institute), Leningrad, 1956.

ASSOCIATION: Leningr. politekhn. in-t (the Leningrad Polytechnic Institute)

Card 1/1

SOLOMONOV, N.M.

Network for the synchronization of a voltage pulse generator and current pulse generator. Izv. NIIPT no.2:269-274 '57. (MIRA 13:9)

SOLOMONOV, N.M.

Theoretical analysis of synchronization circuits of the voltage-pulse generator and of the pulse generator. Izv. NIIPT no.4:196-212 '59. (MIRA 13:2)

(Electric generators)

NIKOL'SKIY, N.K.; SOLOMONOV, N.M.

Use of electric insulators with a semiconducting glaze on electric power transmission lines in areas with a highly polluted atmosphere. Izv. NIIPT no.5:195-213 '60. (MIRA 14:1)
(Electric lines--Overhead)
(Electric insulators and insulation—Testing)

KALININ, Ye.V.; SOLOMONOV, N.M.

Heat resistance and aging of hard glass insulators. Izv. NIIPT no.7:190-202 '61. (MIRA 14:9)
(Electric insulators and insulation) (Electric lines--Overhead)

SOLOMONOV, N.M.

Experience in using suspension insulators with semiconductive glazing in areas with heavy industrial air pollution. Izv. NIIPT no.9:211-220 '62. (MIRA 15:12)
(Electric lines—Overhead)

ACCESSION NR: AT4045613 E/0000/64/000/000/0147/0153 B

AUTHOR: Dalinin, Ye. V. (Candidate of technical sciences, Head of a sector of laboratory for high tension techniques); Merkhalev, S D. (Candidate of technical sciences, Senior research associate); Solomonov, N. M. (Candidate of technical sciences, Senior research associate); Tikhodeyev, N. N (Candidate of technical sciences, Head of laboratory for high tension techniques)

TITLE: Electrical characteristics of insulators used on 500 kv lines

SOURCE: Dal'niye elektroperedachi 500 kv (long-distance transmission of 500 kv. electric power); sbornik statey. Moscow, Izd-vo Energiya, 1964, 147-153

TOPIC TAGS: high voltage line, power line, electric power transmission, insulator, insulator chain, breakdown voltage, disruptive voltage, flashover

ABSTRACT: The disruptive voltages of insulator chains were measured to help select the proper insulator system for a 500 kv power line. The types of insulators investigated were the P-7, P-8, P-5, P-11 and the new alkaline glass types, PM and PS. Results obtained in the laboratory and in the field for dry insulators showed that discharge in this case takes place through the air (between shielding and support structure); the results are summarized in Fig. 1 of the Enclosure. Protective shielding increases the disruptive voltage by about 10%. For wet insulators, the discharge takes place mostly over the surface of the insulator and the disruptive voltage varies almost linearly with the number of insulators in the chain; it can

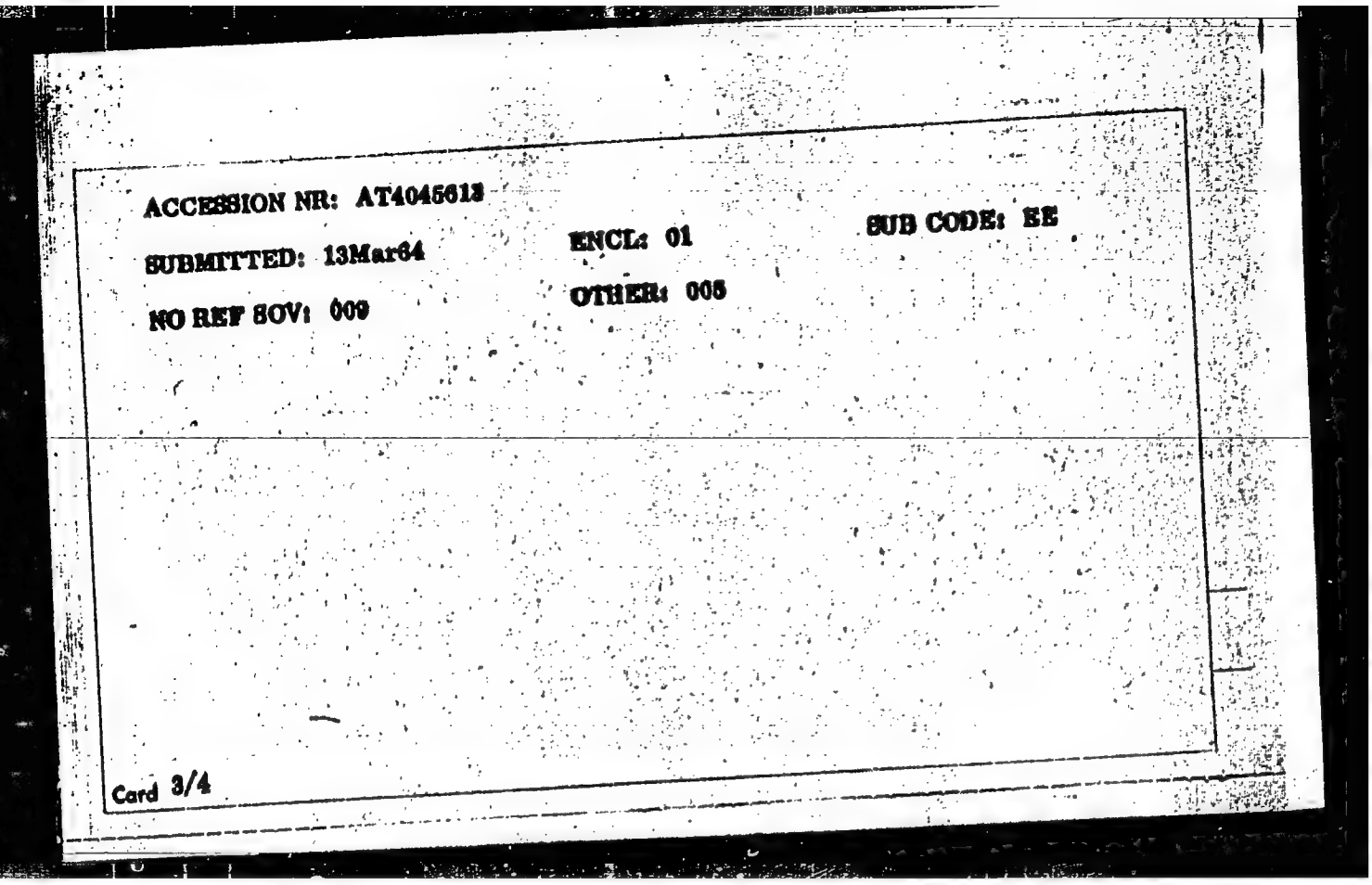
1/4

ACCESSION NR: AT4045613

therefore be characterized by a voltage gradient E_m which generally increases with a decrease in H/D, i.e. the ratio of insulator height to the diameter of its disc. For P-type insulators with H/D = 0.63, E_m = 210 kv/m, for PM-insulators with H/D=0.51-0.55, E_m=260 kv/m. The flashover characteristics of insulator chains were then investigated at the constant voltages. These were also found to increase linearly with the number of insulators in the chain and the voltage gradient in this case varied with atmospheric conditions and the amount of dirt collected on the insulators. Correspondingly, the required number of insulators in a chain for a 500 kv line varies depending upon which criterion is used and is generally largest for a wet insulator or heavy rains (22 for P-7 insulator), the average being about 19. The impulse disruptive voltages simulating lightning conditions were investigated and it was found that for a chain of twenty P-8.5 insulators, the disruptive voltage varied between 1600 and 2500 kv depending on the polarity and presence or absence of shielding. Orig. art. has: 3 figures and 4 tables.

ASSOCIATION: Laboratoriya tekhniki vy*sokikh napryazhenly, Nauchno-issledovatel'skiy institut postoyannogo toka (Laboratory for High Tension Techniques, Scientific Research Institute for Direct Current).

Card 2/4



ACCESSION NR: AT4045613

SUBMITTED: 13Mar64 ENCL: 01 SUB CODE: EE

NO REF SOV: 009 OTHER: 005

Card 3/4

ACCESSION NR: AT4045613

ENCLOSURE: 01

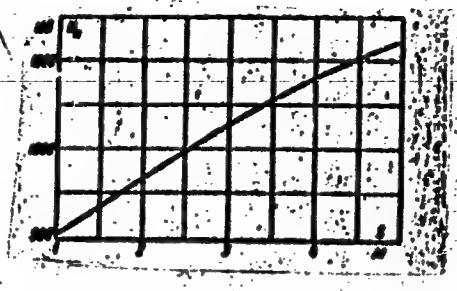


Fig. 1. Dependence of the disruptive voltage of a dry disc insulator chain with ... shielding on the length of the chain.

Card 4/4

SOLOMONOV, Petr Andreyevich, starshiy nauchnyy sotr., kand. tekhn. nauk, inzh.-podpolkovnik; GERASIMOV, R.A., inzh.-polkovnik; DRUZHININSKIY, M.V.,inzh.-podpolkovnik, red.; BUKOVSKAYA, N.A., tekhn. red.

[Service life of modern airplanes]O tekhnicheskom resurse sovremennykh samoletov. Moskva, Voenizdat, 1962. 66 p.
(MIRA 16:1)

(Airplanes)

ACC NR: AM6013721 Monograph UR/

Solomonov, Petr Andreyevich (Senior Scientific worker; Candidate of Technical Sciences)

48
46
B+1

Problems of reliability in aeronautical engineering (Voprosy nadezhnosti aviatsionnoy tekhniki) Moscow, Voyenizdat M-va obor. SSSR, 1965. 141 p. illus., biblio. 6500 copies printed.

TOPIC TAGS: aeronautic engineering, system reliability, reliability engineering, reliability theory

PURPOSE AND COVERAGE: The book is intended for engineers and pilots of the Soviet Air Force, Civil Aviation, DOSAAF (Civil Defense), and for students in Aviation-Education Institutions. Teaching staffs also can benefit from this book, in particular from chapter two. The author discusses operational reliability in aeronautical engineering, the prevention and correction of malfunctions, and the shortcomings characteristic of aircraft parts and systems. In the first chapter, basic reliability factors are discussed, classified, and illustrated. The effect of these factors (for example, the fluctuating acoustic loads created by an engine's jet stream) on the aircraft's operation are pointed out, and the theory of probability as applied in the theory of reliability is discussed. In the second chapter, the author

Card 1/3 UDC 623.74:62-19

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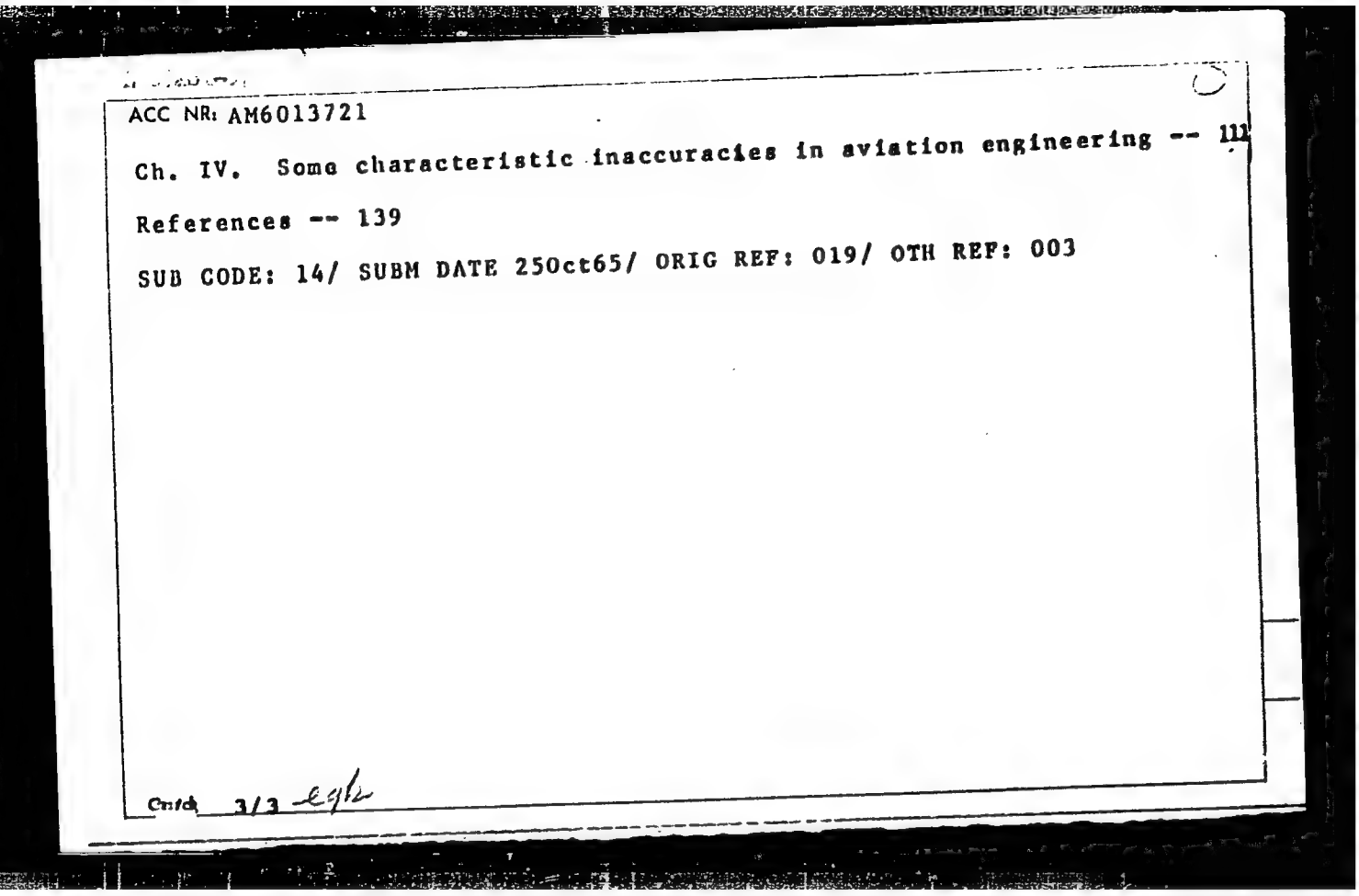
ACC NR: AM6013721

discusses methods and measures by which reliability can be guaranteed. Chapter 3 deals with fittings, instrumentation, and equipment. The author consolidates in one table all maintenance procedures which should be practiced during aircraft operation in order to secure maximum reliability. The last chapter covers thermal fatigue, bending, torsional breakdown, and disintegration in wings, wing planking, fuselage covering, fuselage framing, all types of brackets and landing gears, and the axis of the aircraft. The author illustrates several of these points by actual photos. He also explains methods of spotting defects. The book has 57 illustrations.

TABLES OF CONTENTS [abridged]:

Card 2/3



ACC NR: AM6013721

Ch. IV. Some characteristic inaccuracies in aviation engineering -- 111

References -- 139

SUB CODE: 14/ SUBM DATE 25Oct65/ ORIG REF: 019/ OTH REF: 003

Card 3/3 egh

ANTOKOL'SKAYA, Mir'yam Yakovlevna; BRONSHTEYN, Isaak Iosifovich; MARTYNOV, Mikhail Ivanovich; SMIRNOV, Anatoliy Fedorovich; SHKLOVSKAYA, Anna Yevgen'yevna; ZHURAVLEVA, Ye.I., retsenzent; SOLOMONOV, P.I., retsenzent; YERMOKHINA, N.V., red.;

[Manual on raw materials, intermediate products and finished products in confectionery; manufacture; physicochemical characteristics] Spravochnik po syr'iu, polufabrikatam i gotovym izdeliiam konditerskogo proizvodstva; fiziko-khimicheskie kharakteristiki. Moskva, Izd-vo "Pishchevaia promyshlennost'," 1964. 229 p. (MIRA 17:5)

AID P - 3474

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 9/20

Author : Solomonov, P., Eng. Maj.

Title : Securing the working stability of turbojet engines

Periodical : Vest. voz. flota, 12, 46-50, D 1955

Abstract : The author discusses various elements on which the working conditions of turbojet engines depend. He describes fuel regulators and gives some trade marks. He mentions also names of engineers working in this field. Diagrams, graphs.

Institution : None

Submitted : No date

SOV/86-59-3-35/46

AUTHOR: Solomonov, P.O., Engr. Lt Col

TITLE: Duration of Useful Life of Aircraft /Tekhnicheskiy resurs samoleta/

PERIODICAL: Vestnik vozdushnogo flota, 1959, Vol 42, No. 3, pp 68-74

ABSTRACT: Since new techniques have increased the understanding of problems concerned improved methods are now used to determine more precisely the duration of useful life of airframe and equipment. (1) The airframe must satisfy the requirements established for static strength and static endurance. No definite relationship has been discovered between the engineering picture which is created when static strength declines and that created when static endurance declines also, the factors and manifestations pertaining to both cases differ. These facts made it necessary to investigate static endurance and this is discussed at some length; such factors as force concentration, preliminary overloading, variation in the chemical composition of alloys, and load frequency and load cycle assymmetry are mentioned. Static endurance determines the life expectancy of aircraft. The expected-life figure is calculated on the basis of flight and laboratory tests, and of experience gained while using and repairing aircraft. The collective life figure represents the life of an airframe and equipment. The minimum life span is determined first, and then the maximum life span. Inspection methods and locations to be inspected are estab-

Card 1/2

SHUSTER, Ya.[Susters, J.]; CHARNAYA, R.; ROZENBERG, D.; SOLOMONOV, S.; SHTERNS, Z.[Sterns, Z.]

Pharmacological data on the analeptic, bemegride. Vestis Latv ak no.8: 105-110 '61.